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### DEATH RATES AND EXPECTATION OF LIFE

DIRECTOR SAM. L. ROGERS, of the Bureau of the Census, Department of Commerce, is soon to issue a unique set of tables, the first of their kind which have ever been prepared by the United States government. These tables, which were compiled in the division of vital statistics, under the supervision of Professor James W. Glover, of the University of Michigan, show death rates and expectation of life at all ages for the population of the six New England states, New York, New Jersey, Indiana, Michigan and the District of Columbia (the original death-registration states) on the basis of the population in 1910 and the mortality for the three years 1909, 1910 and 1911. They are similar to the "life tables" prepared by life insurance companies, but differ from them in that they relate to the entire population of the area covered, whereas the life insurance tables relate only to risks selected through medical examination and otherwise.

Expectation of life, at birth, in a stationary population—that is, one in which the births and deaths were equal and were the same from year to year, and in which there was no immigration or emigration—would be the same as average age at death, which is calculated by totalizing the ages of all deceased persons and dividing the result by the number of deceased persons.

According to these tables the average expectation of life, at birth, for males is 49.9 years; for females, 53.2 years; for white males, 50.2 years; for white females, 53.6 years; for native white males, 50.6 years; for native white females, 54.2 years; for Negro males, 34.1 years, and for Negro females, 37.7 years. Females are thus longer lived than males to the extent of more than 3 years, and in the case of the native whites and Negroes, more than 3½ years.

The expectation of life at the age of 1 is considerably greater than at birth, being 56.8 years for native white males and 59.5 for native white females, and reaches its maximum at the age of 2, when it is 57.5 for the former

class and 60.1 for the latter. At the age of 12 the average native white male's expectation of life is 50.2 years; at 25 it is 39.4 years; at 40, 28.3 years; at 50, 21.2 years; at 60, 14.6 years; at 70, 9.1 years, and at 80, 5.2 years. Similarly, at the age of 12 the average native white female's expectation of life is 52.6 years; at 25 it is 41.8 years; at 40, 30.3 years; at 50, 22.8 years; at 60, 15.8 years; at 70, 9.8 years, and at 80, 5.5 years.

A part of the difference between expectation of life for men and for women is due to the greater number of violent deaths among men. Nearly four fifths of these violent deaths—suicides, homicides and accidental deaths—are of males, and such deaths form about 7 or 8 per cent. of the total number occurring each year. This fact, however, does not account fully, or even in major part, for the greater longevity of women. An examination of the tables discloses a lower death rate for females than for males during each of the first 12 months of life and, in the case of the native whites, during each year of life up to the age of 94. During the first month of life the death rate among native whites is nearly 28 per cent. higher for boys than for girls, and during the first year it is more than 20 per cent. higher.

The enormous waste of infant life which still goes on, although medical science has done and is doing much to arrest it, is shown by the exceedingly high death rates which prevail among infants under 1 year of age. Of 100,000 native white boy babies born alive 4,975, or almost 5 per cent., die during the first month, and 12,602, or 12.6 per cent., die within one year. The girl baby's chance of life is considerably better, the death rate among native white females during the first month being 3,894 per 100,000 born alive, or less than 4 per cent., and during the first year 10,460 per 100,000, or nearly 10.5 per cent.

On its first birthday, however, the likelihood that a child will die within the year is only about one fourth as great as it was at birth, the death rate among native whites during the second year being 2,841 per 100,000 for males and 2,610 per 100,000 for females. The

rate continues to decrease until the twelfth year of life—that is, the period between the eleventh and twelfth birthdays—during which it is only 228 per 100,000 for males and 198 per 100,000 for females. This, the figures indicate, is the healthiest year of life among native whites. Thereafter there is a continuous increase in the death rate from year to year. During the forty-eighth year of life, in the case of native white males, it is 1,267 per 100,000, or almost exactly what it was during the third year, 1,266; during the sixty-second year it is 2,919 per 100,000, or a little more than during the second year, 2,841, and during the eightieth year it is 12,184, or somewhat less than during the first year, 12,602. Similarly, among native white females the rate during the fiftieth year, 1,120, is a little less than during the third year, 1,144; during the sixty-third year it is 2,548, or somewhat less than during the second, 2,610, and during the eightieth it is 10,901 per 100,000, or a little more than during the first, 10,460. The native white man at the age of 102 and the native white woman at 99 have approximately the same prospect of dying within one month that they had at birth.

To say that a person's expectation of life is a certain number of years is not the same as saying that he has an even chance of living that number of years. This is because, as already explained, expectation of life represents the average remaining length of life, at any given age, in a stationary population, whereas an average person in a given group has an even chance of living to what is called the median age at death, that is, the age below which half of the members of that group will die. The median age at death for all native white males in the assumed stationary population would be 60; that is to say, of a given number of such males born alive, half would die before reaching 60 and the other half at 60 and beyond. A native white male child at birth, then, has one chance in two of reaching this age. At the end of his first year, however, he has a trifle better than an even chance of reaching 64; and at 42 he has one chance in two of attaining three score and ten. Similarly, a native white female child at birth has

an even chance of living a few months past the age of 64; at the age of 1 she has one chance in two of living until she is nearly 68 years old; and at 22 her chance of reaching 70 is an even one. Thus a native white man at 42 and a native white woman at 22 have about the same chances of celebrating their seventieth birthdays.

The relative healthfulness of city and country is strikingly shown by the tables, according to which the death rate among white males under 1 year of age in cities having 8,000 inhabitants and over in 1909, and in cities of 10,000 and over in 1910 and 1911, is 13,380 per 100,000 born alive, whereas in smaller places the corresponding rate is only 10,326 per 100,000, or 23 per cent. less than the rate for cities. A similar difference prevails with respect to white females under 1 year of age, for whom the death rate in cities is 11,123 per 100,000 born alive, while in rural localities it is only 8,497 per 100,000, or 24 per cent. less than the urban rate.

For white males the expectation of life, at birth, in rural localities is 7.7 years greater than in cities; at the age of 10, 5.4 years greater, and until the age of 39 is reached there is a margin of more than five years in favor of the country. Thereafter the difference becomes gradually less, but is always in favor of the country until the age of 88 is reached, at and after which the cities show a slightly greater longevity than the rural localities.

For white females the difference between urban and rural longevity, while pronounced, is somewhat less than in the case of males. At birth the white female's expectation of life is 6 years greater in rural than in urban localities; at 10, 3.3 years greater, and until the age of 46 is attained the difference continues to be more than 3 years. Thereafter it declines until the age of 83 is reached, after which the cities have a slight advantage over the country.

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#### THE IROQUOIS INDIAN GROUPS OF THE NEW YORK STATE MUSEUM

THERE have recently been opened for public exhibition in the New York State Museum six